

**CLAIMS**

What is claimed is:

5      1. An apparatus for music production by a local and at least one remotely located musicians  
the apparatus comprising:

a local music signal produced by a local music source and conducted for processing:

10      a) to a local music monitor;  
b) to a multiplexing means and a first telephone line for transmitting a midrange frequency portion of the local music signal to a remote location; and  
c) in sequence, to an output low bandpass filtering means, a modulator and frequency shifting means and frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low frequency portion of the local music signal to a remote location; and  
15      d) in sequence, to a demultiplexing means, an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high frequency portion of the local music signal to the remote location;

20      a remote music signal produced by a remote music source and conducted for processing through s second telephone line and further:

25      a) to the local music monitor for receiving a midrange portion of the remote music signal;  
b) in sequence, to an input low bandpass filtering means, a demodulator and frequency shifting means, and a modulator and frequency shifting means and thence to the local music monitor;  
c) in sequence, to an input high bandpass filtering means, a frequency multiplying means and thence to the local music monitor;

such that the local music signal and the remote music signal are combined to form a combined music signal.

2. The apparatus of claim 1 further providing a means for signal level control so as to  
5 provide identical levels in the output and input signals.

3. The apparatus of claim 1 further providing a means for signal delay control so as to provide synchronization between the output and input signals.

4. An apparatus for music production by a local and at least one remotely located musician,  
the apparatus comprising:

10 a local music stereo signal having a left and a right channel stereo portions produced by a local music source and conducted for processing of the left channel portion of the stereo signal:

- c) to a local music monitor;
- d) to a multiplexing means and a first telephone line for transmitting a midrange frequency left channel portion of the local music signal to a remote location;

15 e) in sequence, to an output low bandpass filtering means, a modulator and frequency shifting means and frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low range frequency left channel portion of the local music signal to the remote location; and

20 f) in sequence, to an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high range frequency portion of the local music signal to the remote location;

and conducted for processing of the right channel portion of the stereo signal:

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- a) to the local music monitor;

25 b) to the multiplexing means and the first telephone line for transmitting a midrange frequency right channel portion of the local music signal to the remote location using the first telephone line;

- c) in sequence, to the output low bandpass filtering means, the modulator and frequency shifting means and frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low frequency right channel portion of the local music signal to the remote location; and
- 5 d) in sequence, to an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high frequency right channel portion of the local music signal to the remote location; and

a remote music stereo signal having a left and a right channel stereo portions produced by  
10 a remote music source and conducted for processing of a left channel portion of the remote stereo signal:

- a) from a second telephone line, to a de-multiplexing means for receiving a midrange frequency left channel portion of the remote music signal from the remote location and therefrom to the local music monitor;
- 15 b) in sequence, from the second telephone line, to a de-multiplexing means, an input low bandpass filtering means, an input demodulating means, an input frequency shifting means, and the local music monitor; and
- c) in sequence, from the second telephone line, to the de-multiplexing means, an input high bandpass filtering means, a frequency multiplying means, and the local music monitor;

20 and conducted for processing of the right channel portion of the remote stereo signal:

- d) from a second telephone line, to a de-multiplexing means for receiving a midrange frequency right channel portion of the remote music signal from the remote location and therefrom to the local music monitor;
- 25 e) in sequence, from the second telephone line, to the de-multiplexing means, the input low bandpass filtering means, the input demodulating means, the input frequency shifting means, and the local music monitor; and

f) in sequence, from the second telephone line, to the de-multiplexing means, an input high bandpass filtering means, a frequency multiplying means, and the local music monitor;

such that the remote and local stereo signals are merged for output to the local music monitor.

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*smt a2* 5. The apparatus of claim 5 further providing a means for signal level control so as to provide identical levels in the output and input signals.

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6. The apparatus of claim 5 further providing a means for signal delay control so as to provide synchronization between the output and input signals.

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7. An apparatus for music production by a local and at least one remotely located musician, the apparatus comprising:

a local music stereo signal having a left and a right channel stereo portions produced by a local music source and conducted for processing of the left and right channel portions of the stereo signal:

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a) to a local music monitor;

b) to a multiplexing means for transmitting a midrange frequency left and right channel portions of the local music signal to a remote location using a first telephone line;

c) in sequence, to an output low bandpass filtering means, a modulator and frequency shifting means and frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low frequency left and right channel portions of the local music signal to the remote location; and

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d) in sequence, to an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high frequency left and right portions of the local music signal to the remote location;

a remote music stereo signal having a left and a right channel stereo portions produced by a remote music source and conducted for processing of left and right channel portions of the remote stereo signal:

- a) from a second telephone line, to a de-multiplexing means for receiving a midrange frequency left and right channel portions of the remote music signal from the remote location and therefrom to the local music monitor;
- b) in sequence, from the second telephone line, to a de-multiplexing means, an input low bandpass filtering means, an input demodulating means, an input frequency shifting means for a low range left and right stereo portions to the local music monitor; and
- c) in sequence, from the second telephone line, to the de-multiplexing means, an input high bandpass filtering means, a frequency multiplying means, for a low range left and right stereo portions to the local music monitor;

such that the remote and local stereo signals are merged for output to the local music monitor.

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- ~~8. The apparatus of claim 8 further providing a means for signal level control so as to provide identical levels in the output and input signals.~~
- ~~9. The apparatus of claim 8 further providing a means for signal delay control so as to provide synchronization between the output and input signals.~~

10. An apparatus for music production by a local and at least one remotely located musician, the apparatus comprising:

a local music stereo signal having a left and a right channel stereo portions produced by a local music source and a remote music stereo signal having a left and a right channel stereo portions produced by a remote music source, the signals conducted for processing of the left and right channel portions of the stereo signal to a local music monitor:

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- a) the local stereo signal being directed to a multiplexing means for transmitting a midrange frequency portion to a remote location using a first telephone line;
- e) in sequence, to an output low bandpass filtering means, a modulator and frequency shifting means and a frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low frequency portion of the local music signal to the remote location; and
- f) in sequence, to an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high frequency portion of the local music signal to the remote location;

10 a remote music stereo signal having a left and a right channel stereo portions produced by a remote music source and conducted for processing of left and right channel portions of the remote stereo signal:

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- b) from a second telephone line, to a de-multiplexing means for receiving a midrange frequency portion of the remote music signal from the remote location and therefrom to the local music monitor;
- c) in sequence, from the second telephone line, to a de-multiplexing means, an input low bandpass filtering means, an input demodulating means, an input frequency shifting means for a low range portion to the local music monitor; and
- d) in sequence, from the second telephone line, to the de-multiplexing means, an input high bandpass filtering means, a frequency multiplying means, for a low range portion to the local music monitor;

20 such that the remote and local stereo signals are merged for output to the local music monitor.

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*sub a 4 >* ~~11. The apparatus of claim 11 further providing a means for signal level control so as to provide identical levels in the output and input signals.~~

*sub a4*  
*cont*

~~12. The apparatus of claim 11 further providing a means for signal delay control so as to provide synchronization between the output and input signals.~~

13. An apparatus for music production by a local and at least one remotely located musician, the apparatus comprising:

5 a local music stereo signal having a left and a right channel stereo portions produced by a local music source and a remote music stereo signal having a left and a right channel stereo portions produced by a remote music source, the signals conducted for processing of the left and right channel portions of the stereo signal to a local music monitor:

10 a) the local stereo signal being directed to a multiplexing means for transmitting a midrange frequency portion of the left channel portion of the stereo signal to a remote location using a first telephone line;

15 b) in sequence, to an output low bandpass filtering means, a modulator and frequency shifting means and a frequency shifting means, the multiplexing means, and the first telephone line for transmitting a low frequency portion of the left channel of the stereo signal of the local music signal to the remote location; and

20 c) in sequence, to an output high bandpass filtering means, a frequency dividing means, the multiplexing means and the first telephone line for transmitting a high frequency portion of the left channel portion of the local music signal to the remote location;

a remote music stereo signal having a left and a right channel stereo portions produced by a remote music source and conducted for processing of left and right channel portions of the remote stereo signal:

25 d) from the first telephone line, to a de-multiplexing means for receiving a midrange frequency portion of the left channel portion of the remote music signal from the remote location and therefrom to the local music monitor;

e) in sequence, from the first telephone line, to a de-multiplexing means, an input low bandpass filtering means, an input demodulating means, an input

frequency shifting means for a low range portion of the left channel portion to the local music monitor; and

5           f) in sequence, from the first telephone line, to the de-multiplexing means, an input high bandpass filtering means, a frequency multiplying means, for a low range portion of the left channel portion to the local music monitor;

the local stereo signal being further directed:

10           a) to the multiplexing means for transmitting a midrange frequency portion of the right channel portion of the stereo signal to a remote location using a second telephone line;

b) in sequence, to the output low bandpass filtering means, the modulator and frequency shifting means and the frequency shifting means, the multiplexing means, and the second telephone line for transmitting a low frequency portion of the right channel of the stereo signal of the local music signal to the remote location; and

15           c) in sequence, to the output high bandpass filtering means, the frequency dividing means, the multiplexing means and the first telephone line for transmitting the high frequency portion of the right channel portion of the local music signal to the remote location;

the remote stereo signal being further directed:

20           a) from the second telephone line, to a de-multiplexing means for receiving a midrange frequency portion of the right channel portion of the remote music signal from the remote location and therefrom to the local music monitor;

b) in sequence, from the second telephone line, to the de-multiplexing means, the input low bandpass filtering means, the input demodulating means, the input frequency shifting means for a low range portion of the right channel portion to the local music monitor; and

25           c) in sequence, from the second telephone line, to the de-multiplexing means, the input high bandpass filtering means, the frequency multiplying means, for a low range portion of the right channel portion to the local music monitor;

such that the remote and local stereo signals are merged for output to the local music monitor.

14. The apparatus of claim 14 further providing a means for signal level control so as to  
5 provide identical levels in the output and input signals.

15. The apparatus of claim 14 further providing a means for signal delay control so as to  
provide synchronization between the output and input signals.

16. The apparatus of claim 14 wherein the output low bandpass filtering means is enabled  
for passing 20-300 Hertz, and the frequency shifting means is enabled for shifting the  
20-300 Hertz to 2.25-3 kilo-Hertz.  
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17. The apparatus of claim 14 wherein the output high bandpass filtering means is enabled  
for passing 3-20 kilo-Hertz, and the frequency dividing means is enabled for dividing by  
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18. The apparatus of claim 14 wherein the input low bandpass filtering means is enabled for  
15 passing 2.25-3 kilo-Hertz, and the frequency shifting means is enabled for shifting the  
2.25-3 kilo-Hertz to 20-300 Hertz.

19. The apparatus of claim 14 wherein the input high bandpass filtering means is enabled for  
passing 300-2000 Hertz, and the frequency multiplying means is enabled for multiplying  
by 10.

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